



## AN EXAMPLE OF PREPARED-PLANNED CREATIVE DRAMA IN SECOND GRADE MATHEMATICS EDUCATION

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### **Abstract:**

The aim of this research is teaching addition with natural numbers and the concept of large and small natural numbers in the second grade mathematics course, through creative drama method. The study has been applied to 31 elementary school second grade students studying at a public school in the province of Aydın. In this research, case study based on observation method, which is one of the qualitative research methods, has been employed. The data have been collected through drama lesson plans, observation, and interview methods. The activities involving the acquisitions of "adding two-digit natural numbers" and "absorbing large-small concepts" prepared by the researcher, have been applied in the classroom. The drawings of students, literary notes, and observation reports kept by researchers have been used in the evaluation of the activity. As a result of this application, students' views towards the questions covering the whole application have been gathered. The results of the study suggest that prepared-planned creative drama activities are an entertaining and enjoyable way for students to learn. The notes taken by the participative observers and findings obtained from the interviews indicate that drama activities increase sharing among students and that the students could associate what they have learned with some of the situations they encounter in their every day-life. It is observed that the students learn by having more fun while playing games, which involves a high amount of physical movements. Drawing the attention of students through instructions in the warm-up phase of the activity increased students' curiosity in learning. In the animation phase of the activity, it was observed that the students' interest in the mathematics increased, they had fun while making the mathematical operations, their participation to the

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lesson was high throughout the activity, the energy they received from the lesson was at the maximum level, they learned by doing and living, and they obtained an experience they could use in their every day-life. In the evaluation phase of the activity, the students were asked to describe how they felt by drawing a picture or writing a story as a summary of the creative drama activity they experiences by doing. According to the stories they have written and the pictures they have drawn, it is apparent that they were entertained and happy throughout the activity. The results of this study indicate that the students relieve their mental exhaustion and a relaxed classroom setting is achieved through the relaxation activities.

**Keywords:** creative drama, addition, concepts of large-small, mathematics teaching

## 1. Introduction

In the information age 21st century, alternative teaching methods have replaced traditional teaching methods. In alternative teaching methods, students are absorbed in the teaching and given the opportunity to structure themselves. Alternative teaching methods do not only increase the academic success of the students, but also increase their awareness and improve their certain social skills such as problem-solving and planning. Drama is one of the methods used in acquiring these skills.

Drama is an activity carried out within the framework of workshop activities and consists of dramatization, animation, and improvisation phases, which also includes the theoretical dimension. Workshop activities are conducted under the guidance of a leader and with the participation of a group. Drama is defined as a process, which involves the directive of a leader and group interaction (Morgül, 1995 and Üstündağ, 1998). Drama is divided into categories such as educational drama, psychodrama, sociodrama, and creative drama.

In a group work like creative drama, in which theatre or drama techniques such as improvisation and role-playing are used, individuals animate and make sense of the processes similar to games, during which they revise their observations, experiences, emotions, and sometimes an abstract concept of a behavior by recollecting previous cognitive patterns (San, 2002).

While performing creative drama activities, mainly art education, in terms of the content, and all departments of education are benefitted. It can create content for itself by availing itself from many fields such as photography, music, sculpture, poetry, stories, sociology, and psychological basis of education (Üstündağ, 1998). Drama, which

acknowledges learning by living as its main principle, works as a step for children towards achieving physical, social, rational-mathematical knowledge.

Mathematics is a strongly gradual lesson. It is not possible to learn a subject without learning the previous subject. Therefore, fundamental concepts or operation knowledge must be adopted in the best manner and the permanence of the instructed material must be ensured. The most effective way of these type of learnings is by doing and living. It is possible to make it happen through creative drama (Özsoy, 2010).

Creative drama is an effective teaching method in teaching mathematics lessons, keeps students active throughout the process of learning, promotes students to solve problems on their own or with a group, supports raising independent learners, raises creative individuals, and includes many methods such as question-answer, discover, and discussion that are among the new approaches (Soner, 2005).

### **1.1. Objective of the Study**

The fundamental objective of this research is to improve prepared-planned creative drama activities in teaching large-small concepts and addition operation in elementary school second grade mathematics lesson, as well as to reveal and implement these activities in classroom.

### **1.2. Problem of the Study**

It is a known fact that mathematics is considered an abstract, boring, and disliked lesson. One of the significant reasons behind this situation is due to the prejudice of students against this lesson. That's why, it is a necessity to implement methods that ensure active participation and make mathematics entertaining and intriguing, in order to ensure effective teaching of mathematics.

In line with that purpose the answers to the following questions will be sought,

1. How does the process of teaching occur for the concept of large and small natural numbers and addition operation in the second grade mathematics course with the creative drama method?
2. Does teaching the concept of large and small natural numbers and addition of two-digit natural numbers in the second grade mathematics course with creative drama, display differences? If so, what type of a difference is it?

### **1.3. Importance of the Study**

The traditional methods used in teaching mathematics lessons seem to be insufficient and ineffective. Students, who do not actively participate in the lesson, gets bored during the lesson and does not succeed as a result of being unable to comprehend the

subject. Students dislike and fear mathematics lesson because of the feeling of failure (Özsoy and Yüksel, 2007). Therefore, this study is of importance since it focuses on enabling students to learn by entertainment as well as their active participation through creative drama method.

Soner (2005) has examined the impact of using drama method in addition and subtraction operations of fractional numbers in the elementary school third grade Mathematics lesson, on cognitive accessibility and permanence. In the study, an experimental group and control group have been created, and the retrieved data have been subjected to pre-test, post-test, permanence test, and attitude scale applications. According to the data collected from the study, a significant difference was found in terms of the mean scores of the group, in which traditional teaching was performed, and the cognitive accessibility scores of the group, in which teaching was performed through creative drama method, in favor of the experimental group. Again, a significant difference was found in terms of the mean of permanence scores of the group, in which traditional teaching was performed, and the mean of permanence scores of the group, in which teaching was performed through creative drama method, in favor of the experimental group.

Sözer (2006) has researched the impact of the creative drama method, which is applied in the fractions unit in elementary school fourth grade, on the success, attitude, and learning permanence of students. 75 elementary school fourth grade students participated in this study, which was conducted by creating an experimental pattern with pre-test, post-test, and control group; the participants of the study were divided into two groups. Permanence test was applied 6 months later, in the mentioned study. The results of the study demonstrated that drama method improves success; success positively affects permanence and attitude towards mathematics.

Taş (2008) has aimed to reveal the views on the contribution of teachers' use of drama technique in mathematics lesson in elementary school level, to the basic mathematics lesson skills of students. In the aforementioned study, teachers have stated that the drama technique improves problem-solving, association, communication, and reasoning skills.

Şenol (2011) has examined the impact of creative drama applications in elementary school mathematics lesson on students' problem-solving strategies, success in mathematics lesson, academic self-concept towards mathematics lesson, and in-group interaction patterns. The study in question revealed that creative-drama-supported mathematics curricula positively affected the success of students.

In their master's thesis, Hatipoğlu (2006) has aimed at detecting the impact of the use of drama method in teaching "Geometrical Figures" and "Numbers in our Life"

units in elementary school fifth grade mathematics lesson, on their success level at mathematics. The results of the mentioned study proved that using drama method in mathematics lesson increased the mathematical success of students.

Yenilmez and Uygan (2010) have examined the impact of creative drama method on the self-sufficiency beliefs of elementary school seventh grade students towards geometry. The study revealed that there has been a significant increase in the study group's self-sufficiency beliefs towards geometry and it has positively affected the students' self-confidence and courage.

## **2. Methodology**

The study pattern used in this research includes case study, data collection tools, implementation of the study, and analysis of data.

### **2.1. Pattern of the Study**

In this research, case study based on observation method, which is one of the qualitative research methods, has been employed. In observation-based case studies, participants define their physical environment as a place that they are accustomed to and use frequently. In observation-base case studies, having a small number of participants is advantageous for the study. This advantage can be considered important for researchers to direct the behaviors of participants. Having a large number of participants makes it difficult for researchers to manage the data, but could contribute to increasing the reliability and validity of the study (Uzuner, 1999). In observation-based case study, the main data collection technique is participant observation. In participant observations, observers are not aware of that they are being observed by the participants. They play an active role in the activity, along with the observing participants.

### **2.2. Study Group**

The study group of this research consists of 31 second grade students studying at a public school in the province of Aydın.

### **2.3. Data Collection Tool**

Drama plan, observation notes of the researchers, interviews, pictures drawn by the students, and literary notes written by the students have been used as the data collection tools of the study.

The data have been collected through drama lesson plans, observation, and interview methods. The activities involving the acquisitions of "adding two-digit natural numbers" and "absorbing large-small concepts" prepared by the researcher, have been applied in the classroom. The drawings of students, literary notes, and observation reports kept by researchers have been used in the evaluation of the activity. As a result of this application, students' views towards the questions covering the whole application have been gathered.

#### **2.4. Implementation of the Study**

The study has been carried out in a public school in the province of Aydın. All authorizations necessary for the study have been obtained. During the implementation of the study, the activity and the pictures drawn by the students after the activity have been photographed so as to see what the students have done. The video camera and camera used in the research recorded the students participating in the activity. The drama activity plan has been implemented by taking into account of warm-up, animation, relaxation, and evaluation phases.

#### **2.5. Data Analysis**

At the end of the activity implemented for 2 hours, the data obtained from the notebooks of the students and the notes of the researchers have been descriptively analyzed. The researchers have videotaped what the students have done throughout the process and evaluated the individual studies and notebooks used by the students during the process. As a consequence of all of these evaluations, they took the views of the students into consideration

### **3. Findings**

In the warm-up phase of the implementation, the prior knowledge levels of the students have been determined by asking them various questions on sea and swimming. The teacher gave the students instructions to make them feel as if they were swimming in the sea. The students complied with the instructions (two strokes forward, three strokes back etc.) as if they were swimming in the classroom by striking out. It was observed that the students moved their bodies through these movements and created coordination between the given instructions and their movements, moreover, they seemed to be having fun meanwhile.

In the animation phase, the students firstly selected the friends, whom they'd like to spend time with, and when they realized they exceeded the capacity of the boat, they

changed their friends and tried to select the friends with convenient weight. Thereby, the students were observed to try to solve the problems in groups by doing, living, debating, and having fun. Playing the tour manager, the teacher asked the weights for each boat and let those with convenient weight participate in the tour.

In the evaluation phase of the implementation, the following questions were asked to the students;

- To the question "*how many people did get on each boat?*", they answered 1, 2, and 3 people got on boats.
- To the question "*how much did you weigh? how much was your total weight?*", students on each boat firstly calculated their own weight and then the total weight and informed the teacher of these weights.
- To the question "*how many boats were there in the tour?*", they answered "*15 boats*".
- To the question "*were there any boats that exceeded their capacities?*", they answered "*no*".
- To the question "*what mathematical operations did you make during the activity?*", they answered with "*addition operation*".
- To the question "*how did you feel during the activity?*", the students gave replies such as "*it was a great feeling, I felt as if I was touching the sea*".

Afterwards, the students were asked to write down and draw their feelings. The expressions written by the students are as follows:

- Student Z.Ü, "*I felt like a seagull and as if I was in a ship in this activity. Generally, this activity has been very good for us. We learned addition operation by playing games. We listened to a very nice story and a song.*" (Appendix 2)
- Student N.D, "*There was a boy. His name was Ali. Ali loved taking tours by a boat. He once took a boat trip with his friends. There was a boat, they wanted to get on that boat. That boat could carry 60 kilograms. Ali and his friends added their weights and found out they weighed 59 kilograms in total. They all could get on the boat. They were happy that they all could get on the boat.*" (Appendix 3)
- Student A.B, "*What our teacher taught us was very good. I felt like I was touching the sea while learning them. It was a great feeling. This lesson went very well. Everybody learned very important things.*" (Appendix 4)
- Student M.T, "*I feel myself in the sea. I feel like I'm flying. Ayşe wants to get on the boat with all of her friends, but she wants to get on it with her two friends. She doesn't know which friends to take with her.*" (Appendix 5)
- Student M.Ç, "*Ayşe and her friends wanted to take a boat trip. That's why they went to Kuşadası. Then they went to the beach there. The boat was slowly sailing. Then the boat*"

*came near Ayşe and her friends. However, the boat could not go beyond 50. Ayşe and her friends started to think about it.” (Appendix 6)*

In the relaxation phase, the students were given the following instructions respectively: *“You are flying over the sea, you are so close to the water. The wings of your bird friend flying behind you touch the water. The drops of water cool you down. You fly, fly, and fly and you land on the sails of the ship ahead of you. You take a deep breath and slowly open your eyes”*.

#### **4. Results and Suggestions**

In this research, it was aimed to find the answers to some questions such as how addition operation and large-small concepts occur in the process of teaching in elementary school second grade mathematics course, whether teaching the concept of large and small natural numbers and addition of two-digit natural numbers with creative drama display differences, and if it does, what type of a difference it is.

The results of the study suggest that prepared-planned creative drama activities are an entertaining and enjoyable way for students to learn. The notes taken by the participative observers and findings obtained from the interviews indicate that drama activities increase sharing among students and that the students could associate what they have learned with some of the situations they encounter in their every day-life. It is observed that the students learn by having more fun while playing games, which involves a high amount of physical movements

Drawing the attention of students through instructions in the warm-up phase of the activity increased students' curiosity in learning. In the animation phase of the activity, it was observed that the students' interest in the mathematics increased, they had fun while making the mathematical operations, their participation to the lesson was high throughout the activity, the energy they received from the lesson was at the maximum level, they learned by doing and living, and they obtained an experience they could use in their every day-life. In the evaluation phase of the activity, the students were asked to describe how they felt by drawing a picture or writing a story as a summary of the creative drama activity they experiences by doing. According to the stories they have written and the pictures they have drawn, it is apparent that they were entertained and happy throughout the activity. The results of this study indicate that the students relieve their mental exhaustion and a relaxed classroom setting is achieved through the relaxation activities, moreover classroom management got easier.

The fact that the physical conditions of the classroom was inconvenient, and the classroom was small, which did not give the students much room for movement,



limited the effectiveness of the activity. It is believed that it is necessary to increase the number of physically convenient environments for such activities. Moreover, teachers must know the readiness level of students about the subject that will be instructed and plan the activity in accordance with their readiness level.

Using the materials prepared to be used in drama activities in the same way they are used in every day-life and having an application environment that reflects reality could make it easier for students to transfer their knowledge into every day-life. In the interviews conducted with the students participating in the game phase of drama activities, it was observed that success and willingness of the students, who actively participated in the activity, increased. However, the students, who passively participated in the activities, complained about the activity and mentioned that they did not enjoy it. According to these findings, the game activities in drama activities must be reorganized in such a way that they must ensure the participation of whole classroom and increase the participation in general, and duration of games must be prolonged.

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## Appendix 1

### Activity Plan

**Lesson:** Mathematics

**Subject:** Addition, Small-Large Conceptions

**Grade:** 2

**Duration:** 40+40 minutes

**Method:** Creative Drama

**Instruments:** Scale, music set, a material that can be used as a boat (basin etc.)

**Keywords:** Two-Digit Natural Numbers, Addition Operation, Large Concept, Small Concept

**Acquisition:** Adding two-digit natural numbers, Absorbs large-small concepts.

#### Warm-Up Phase

Students image the classroom as a sea. All students are asked to get into the sea from where they stand. The students are told to swim in the sea in a mixed manner. The students stand where they are after a while. They perform the directions given by the teacher such as "two strokes forward" and "three strokes back" and everybody gets out of the sea from where they entered the water.

#### Animation

We all take a trip to Kuşadası together. We start waiting by the beach to get on the boats. The boats are small, they can only fit two or three people. Everybody can get on the boat with a close friend, with whom they enjoy spending time. The captain of the boat announces "each boat can only carry 50 kg of weight at maximum". Please everybody get on the boat according to this and let the boat trip begin.

#### Relaxation

The students are asked to close their eyes and imagine they are a bird. After the weave sounds coming the speakers, the following instructions are given respectively.

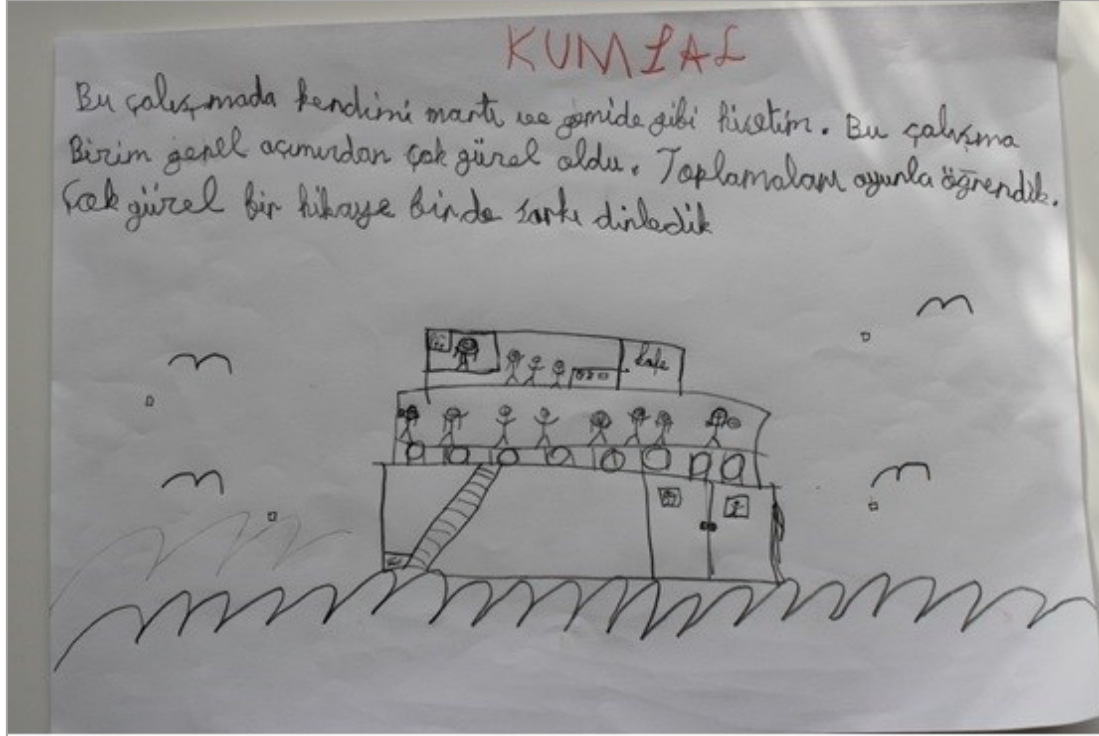
*"You are flying over the sea, you are so close to the water. The wings of your bird friend flying behind you touch the water. The drops of water cool you down. You fly, fly, and fly and you land on the sails of the ship ahead of you. You take a deep breath and slowly open your eyes."* It is possible to splash water on students' face in order to make it more realistic.

#### Evaluation

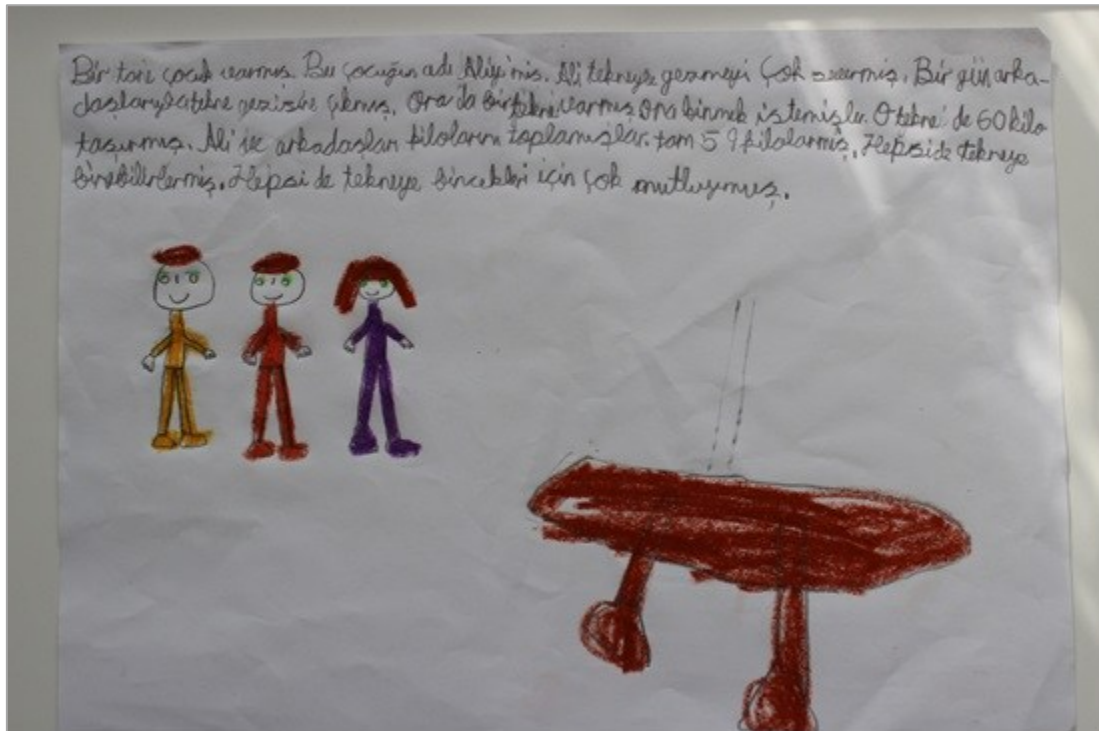
1. How many people did get on each boat?
2. How much did you weigh? How much was your total weight?
3. How many boats were there in the tour?
4. Were there any boats that exceeded their capacities? By how much did these boats exceed their capacities?
5. What mathematical operations did you make during the activity?

6. How did you feel during the activity? Please write a story or draw a picture by writing your feelings about this activity.

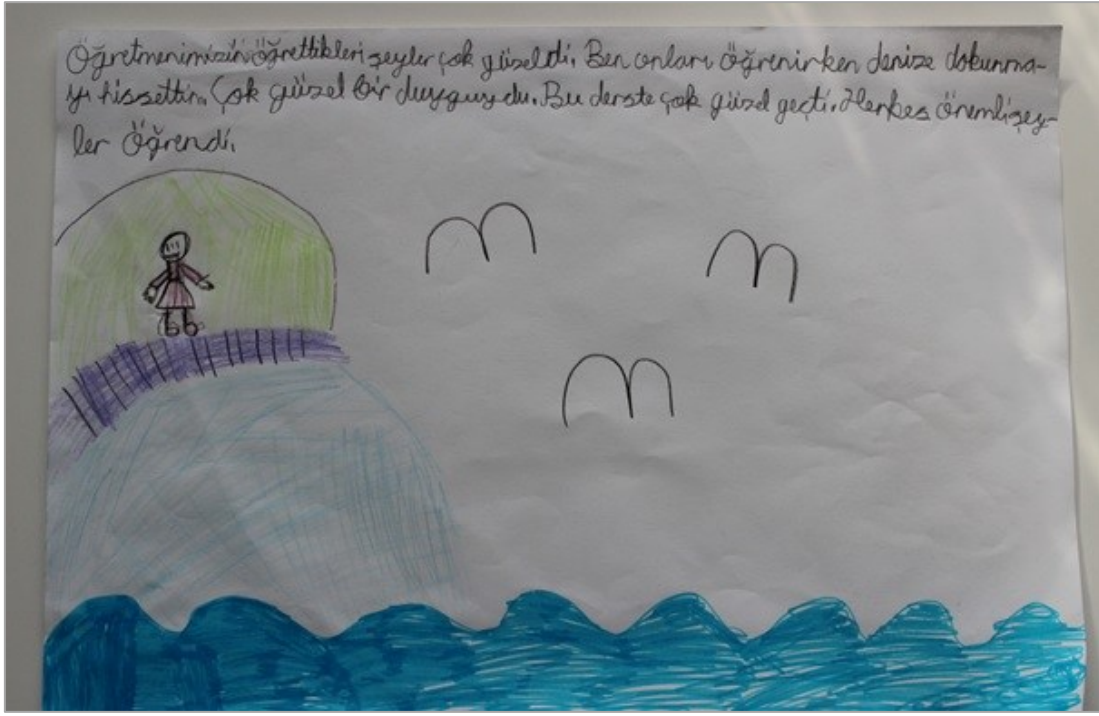
### Appendix 2



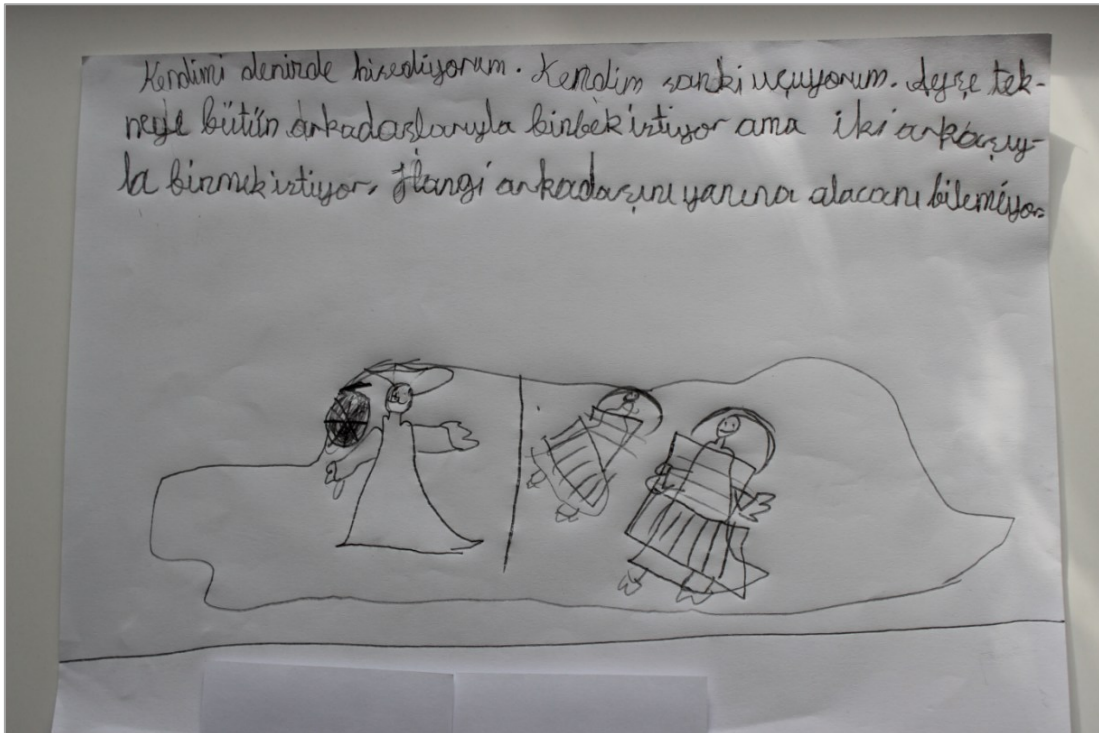
### Appendix 3



#### Appendix 4



#### Appendix 5



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